

U. S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
ASSISTANT SECRETARY FOR HOUSING-FEDERAL HOUSING COMMISSIONER

TO: DIRECTORS, SINGLE FAMILY DIVISION

Series and Series Number: (Supersedes
issued dated October 2, 1992)

MATERIALS RELEASE

NO. 1183c

ISSUE DATE October 3, 1995

REVIEW DATE October 3, 1998

SUBJECT: 1. Product Roof Diaphragm System with Thermo-ply Roof
 Underlayment

2. Name and Address
 of Manufacturer Simplex Products Division
 P. O. Box 10
 Adrian, MI 49221

Data on the nonstandard product described herein have been reviewed by the Department of Housing and Urban Development and determination has been made that it is considered suitable from a technical standpoint for the use indicated herein. This Release does not purport to establish a comparative quality or value rating for this product as compared to standard products normally used in the same manner.

This Materials Release cannot be used as an indication of endorsement, approval or acceptance by HUD of the described product, and any statement or representation, however made, indicating such approval, endorsement or acceptance by HUD is unauthorized. See Code 18, U.S.C. 709.

Any reproduction of this Release must be in its entirety.

USE: Horizontal Roof Diaphragm for Clay and Concrete Tile Roofs.

DESCRIPTION:

Horizontal roof diaphragm systems consist of Thermo-ply underlayment, wood joists or trusses, minimum 1"x 4" spaced sheathing boards, with or without WB 106 steel strap. Thermo-ply roof underlayment shall be wood fiber core with a pressure-laminated 1 mil polyethylene facing on one side and 1/3 mil aluminum foil on the other. The finished board shall have a nominal thickness of 0.078" and weigh a minimum of 0.275 lb. per sq. ft. WB 106 steel wall bracing manufactured by Simpson Strong-Tie Company, Inc. shall be No. 16 ga. x 1 1/4" x 9'-5 3/8". The steel for the bracing shall conform with ASTM A-446 grade A and galvanized coating shall be G-60.

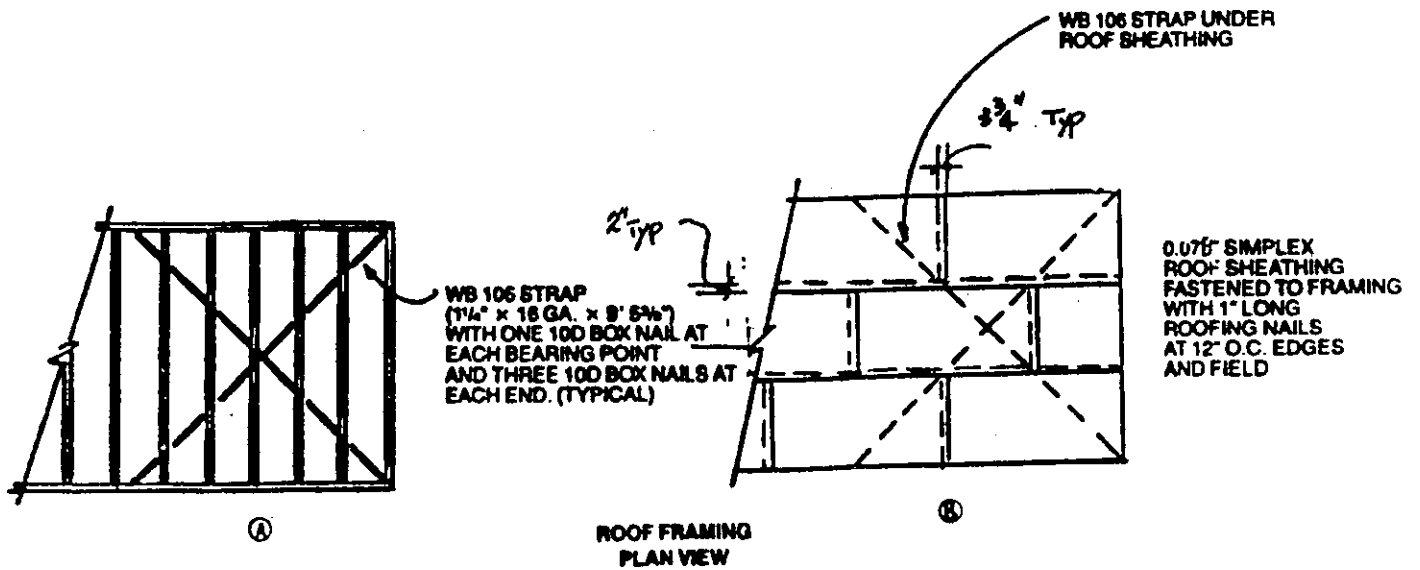
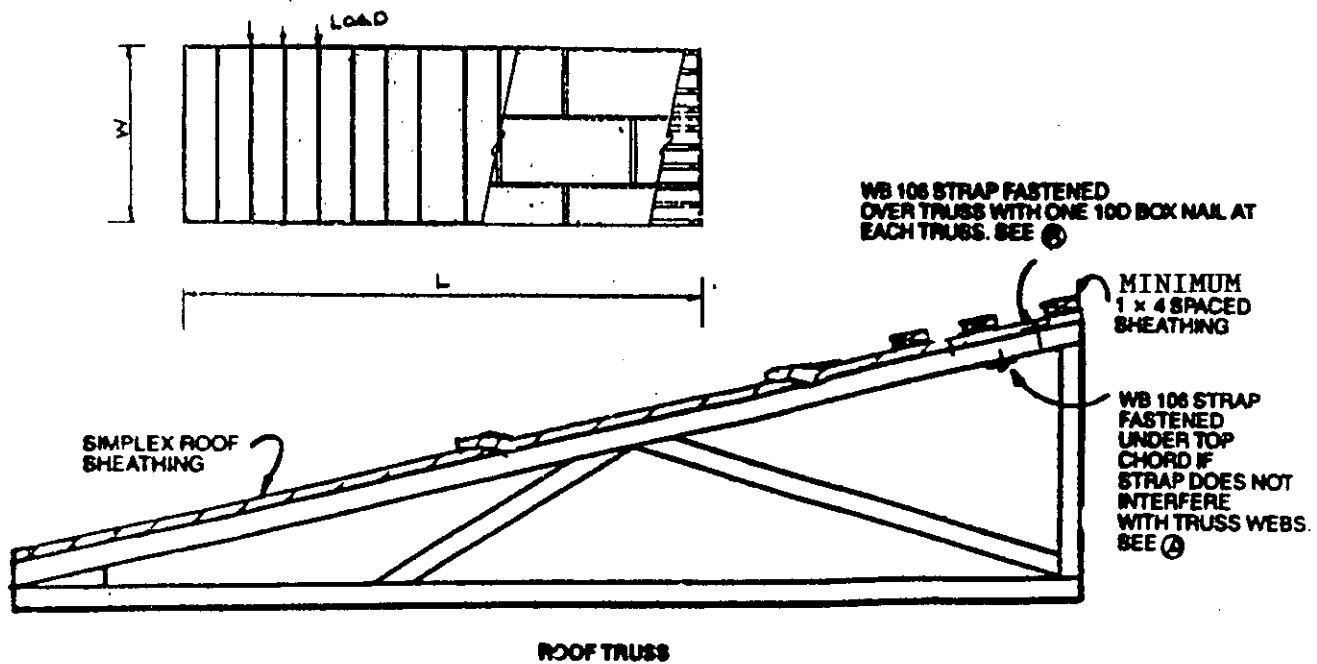
INSTALLATION INSTRUCTIONS:

1. The roof joist or trusses shall be installed in accordance with HUD requirements for new construction (as set forth in 24 CFR 200.926) and shall be spaced no more than 24" o.c.
2. Thermo-ply underlayment is installed over the joists or trusses with foil facing down and fastened 12" o.c. field and perimeter with 1" galvanized steel roofing nails. The sheets are installed perpendicular to the joists with a minimum 3 3/4" vertical lap and 2" horizontal lap. Thermo-ply underlayment shall not be used as a walking surface.
3. Minimum 1"x 4" spaced sheathing board is then installed on top of the Thermo-ply. The spacing shall be maximum 13 1/4" o.c. The 1"x 4"s are installed perpendicular to the joists or trusses. The location of the 1" x 4" butt joint shall be staggered a minimum of 2 joist spaces. 1" x 4"s shall be fastened at each joist with 2 10d box nails. The above installation as a horizontal diaphragm will provide shear resistance as shown in Table No. 1.
4. Additional shear resistance may be obtained by installation of WB 106 bracing. The wall braces are installed in pairs to form an "X" at each end of the roof frame at a 45° angle from the boundaries. The wall brace ends are fastened to joists and/or ledgers with three 10d common nails and the braces are nailed at intermediate joists with one 10d common nail. Where greater lengths are required the wall brace ends are overlapped a minimum of 3". See Figure No. 1 for installation and Item No. 6 for shear values.

TABLE NO. 1

HORIZONTAL ROOF DIAPHRAGMS WITH THERMO-PLY UNDERLAYMENT

THERMO-PLY SHEET LAPS	NAIL SIZE	MINIMUM NOMINAL JOIST WIDTH (inches)	MAXIMUM JOIST SPACING (inches)	MAXIMUM NAILING SPACING (inches)	MAXIMUM SPAN-WIDTH RATIO	ALLOWABLE SHEAR, ψ
3 3/4 inches—vertical 2 inches—horizontal	1-inch-long No. 11 gauge roofing nail	2	24	12	3:1	75



ALTERNATE WB-106 STRAP PLACEMENT

FIGURE NO. 1

5. Allowable shear values are for nails in framing members of Group III species as set forth in the National Design Specification.
6. An additional shear of 265 lbs. is permitted when WB 106 wall bracing is provided at each end of the diaphragm and installed as set forth in this Materials Release (MR). Total shear resistance, in pounds, at each diaphragm support, is determined by multiplying 75 plf by diaphragm width (W) and adding the strap capacity of 265 lbs.
7. The horizontal diaphragm must not support rigid walls such as those constructed of concrete or masonry.

WARRANTY:

Simplex Products Division warrants Thermo-ply to be free from defects in material and workmanship and suited for use as described in this MR for a period of four (4) years.

MANUFACTURER'S RESPONSIBILITIES:

Issuance of this Materials Release (MR) commits the manufacturer to fulfill, as a minimum, the following:

1. Produce, label and certify the material, product or system in strict accordance with the terms of this MR.
2. Provide necessary corrective action in a timely manner for all cases of justified complaint, poor performance or failure reported by HUD.
3. When requested, provide the Office of Manufactured Housing and Regulatory Functions, Manufactured Housing and Construction Standards Division, HUD Headquarters, with a representative list of properties, in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.
4. Inform HUD in advance of changes in production facilities, methods, design of the product, company name, ownership or mailing address.

EVALUATION:

This MR shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this MR shall apply for a renewal or revision 90 days prior to the Review Date printed on this MR. Submittals for renewal or revision shall be sent to HUD Headquarters. Appropriate user fees shall be sent to:

U. S. Department of Housing and Urban Development
Technical Suitability of Products Fees
P. O. Box 954199
St. Louis, MO 63195-4199

The holder of this MR may apply for revision at any time prior to the Review Date. The revision may be in the form of a supplement to the MR.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program," and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the MR. HUD will notify the manufacturer that the MR may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,
2. the manufacturer has changed its organizational form without notifying HUD, or
3. the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the MR should not be canceled. No refund of fees will be made on a canceled document.

This Materials Release is issued solely for the captioned firm,
and is not transferable to any person or successor entity.
